

What is claimed is:

1        1. A heat sink assembly with integrated electronics comprising:  
2              a cover having at least one side open for exposing an interior cavity,  
3              said cover being made of a material having the capability of withstanding high  
4              temperatures;  
5              at least one hybrid circuit housed in said cavity and having interconnect  
6              capability available at said open side of said cover;  
7              a bottom for attachment to and sealing of said at least one open side of  
8              said cover, said bottom being made from a material having heat sink  
9              capabilities and having a plurality of interconnect pins molded therein, said  
10             pins providing electrical interconnect capabilities between said at least one  
11             hybrid circuit and an external device.

1        2. The heat sink assembly as claimed in claim 1 wherein said  
2              cover further comprises a track molded in an edge of said open side, and  
3              wherein said bottom has a bead molded therein for interconnection with said  
4              track in said open side of said cover.

1        3. The heat sink assembly as claimed in claim 2 wherein an  
2              adhesive is applied to said track thereby sealing said bottom to said cover.

1        4. The heat sink assembly as claimed in claim 1 wherein said  
2              bottom is cast aluminum.

1        5. The heat sink assembly as claimed in claim 1 wherein said pins  
2              are wire bond compatible at one end for connection to said at least one hybrid  
3              circuit and said pins are solderable at another end for connection to said  
4              external device.

1        6. The heat sink assembly as claimed in claim 1 wherein said  
2              sealed cover and bottom are filled with a dielectric gel material.

1           7. The heat sink assembly as claimed in claim 1 wherein said  
2 cover has partitions separating said at least one hybrid circuit from another  
3 hybrid circuit housed in said cover.

1           8. A housing for a plurality of electronic components comprising:  
2           a heat sink section having at least one opening therein defining a cavity  
3 for housing said plurality of electronic components;  
4           a bottom section having pins for electrical connection of said plurality  
5 of electronic components and an external device;  
6           means for attaching said bottom section to said heat sink section  
7 thereby fully enclosing and sealing said electronic components in said housing.

1           9. The housing as claimed in claim 8 further comprising a  
2 dielectric gel enclosed in said sealed housing.

1           10. The housing as claimed in claim 8 wherein said means for  
2 attaching said bottom section to said heat sink section further comprises a  
3 tongue and groove attachment between said bottom section and said heat sink  
4 section.

1           11. The housing as claimed in claim 10 wherein said tongue and  
2 groove attachment further comprises an adhesive for sealing said attachment.

1           12. The housing as claimed in claim 8 wherein said pins are wire  
2 bond compatible at one end for connection to said plurality of electronic  
3 components and said pins are solderable at another end for connection to said  
4 external device.

1           13. The housing as claimed in claim 1 wherein said heat sink cavity  
2 has partitions for separating said electronic components.

1           14. A heat sink with integrated electronics comprising:  
2           a cast aluminum housing having a cavity therein for housing said  
3           integrated electronics, said cast aluminum housing having an open side;  
4           a high temperature plastic bottom portion for covering said open side  
5           of said cast aluminum housing and sealing said integrated electronics therein,  
6           said bottom portion having pins molded therein for making electrical  
7           connections between said integrated electronics and an external device.

1           15. The heat sink as claimed in claim 14 wherein said sealed  
2           housing has a dielectric gel therein.

1           16. The heat sink as claimed in claim 13 wherein said housing and  
2           said bottom portion are attached to each other by a tongue and groove  
3           connection.

1           17. The heat sink as claimed in claim 16 wherein said tongue and  
2           groove connection is sealed by an adhesive material.

1           18. The heat sink as claimed in claim 13 wherein said bottom  
2           portion further comprises means for mechanical connection to said external  
3           device.

1           19. The heat sink as claimed in claim 13 wherein said pins are wire  
2           bond compatible with said integrated electronics housed inside said cavity and  
3           solderable to said external device.